

FUNDING PROGRAMME: Erasmus+ programme of the European Union Partnerships for Digital Education Readiness	
PROJECT TITLE/ACRONYM: Textile digitalisation based on digital education and innovative e-Tools / DigiTEX	
AGREEMENT NO.: 2020-1-RO01-KA226-HE-095335	
TOTAL PROJECT BUDGET: 210,426 EUR	INCDTP'S BUDGET: 36,641 EUR
START DATE: 01/03/2021	END DATE: 30/04/2023
WEBPAGE: www.e-digitex.eu	

PARTNERS:



INCDTP-The National Research & Development Institute for Textiles and Leather– COORDINATOR (RO)



AEI TÈXTILS (ES)



CRE.THI.DEV. (GR)



UNIWA - University of West Attica (GR)



CIAPE - Centro italiano per l'Apprendimento Permanente (IT)



KTU- Kaunas University of Technology (LT)



TUIASI- "Gheorghe Asachi" Technical University of Iasi (RO)

GENERAL OBJECTIVES:

The DigiTEX project aimed to support innovative approaches and digital learning technologies, accelerating innovation, teaching, and learning in the field of medical, protective, sensorial, and smart 3D textiles design, testing, and manufacturing of innovative advanced products for healthcare (protective equipment, wearable monitoring devices) within the context of the digital economy.

SPECIFIC OBJECTIVES:

- to co-design wearable prototypes based on needs, new technologies and perspectives in developing 3D smart sensors based textiles for traditional textiles, fashion, medicine, sport/ leisure and technical protective equipment based on 3D rapid prototyping with 3D printing;
- to accelerate the innovation in medical, protective, sensorial and smart 3D textiles for medical devices, protective equipment, sensors and wearable devices in the context of the European economy and digitalisation;
- to learn and teach about 3D prototyping with 3D printing, comfort for medical, protective, sensorial and smart textile for sensors and actuators;
- to develop adequate virtual tools (database, book of best practices, e-books, creative blended learning and e-learning platform for smart intersectoral learning and wearable prototypes development).

SCIENTIFIC CONCEPT:

DigiTEX Erasmus+ aimed to accelerate innovation in smart textile design through 3D rapid prototyping and printing, comfort testing, and manufacturing via co-design and co-development, using creative methods and e-Learning tools within the context of the circular economy.

INTELLECTUAL OUTPUTS:

- O1: Development of e-learning platform
- O2: Book of 'Medical, sensorial and protective textiles development in the context of the European economy and digitalisation'
- O3: Database development – knowledge about medical, protective, sensorial and smart textiles
- O4: Book of best practices 'Smart sensors based textiles from production management to end-user'
- O5: Virtual tools for training - innovation boosting based on creative knowledge mapping

O6: Toolkit for accelerating innovation in medical, protective, sensorial and smart textiles based on creative methods

OBTAINED RESULTS:

- ✓ DigiTEX Moodle Platform www.digitex-moodle.eu/moodle
- ✓ Book 'Medical, sensorial and protective textiles development in the context of the European economy and digitalisation'
- ✓ Database development – knowledge about medical, protective, sensorial and smart textiles
- ✓ Book of best practices 'Smart sensors based textiles from production management to end-user'
- ✓ Short-term joint staff training event 'innovation in medical, protective, sensorial and smart textiles by co-design, co-development, co-business by 3D rapid prototyping, CAD/CAE tools, smart e-textiles technologies and product optimisation' (C4)
- ✓ Intensive Study Programmes for Higher Education Learners (C1-C3)
- ✓ Researchers from INCDTP participated in the LTT activities (C4 and C1-C3) organised in Greece
- ✓ Multiplier event E1 - Smart co-design through eLearning tools, organised by UNIWA in Athens, Greece, in April 2023
- ✓ Multiplier event E2 - Smart textiles development in the context of circular economy, organised by KTU in Kaunas, Lithuania, in November 2022
- ✓ Multiplier event E3 - Design of medical, protective textile and sensorial comfort testing, organised by TUIASI in Iasi, Romania, in January 2023
- ✓ Multiplier event E4 - Accelerate innovation on smart textile design and manufacturing by creative methods, organised by INCDTP in Bucharest, Romania, December 2022
- ✓ Multiplier event E5 - Textile innovation based creative knowledge mapping and digitalisation, organised by CIAPE in December 2022
- ✓ Multiplier event E6 - Accelerate innovation on medical, protective, sensorial and smart textiles by creative methods, organised by CRETHIDEV in Greece, in April 2023

DISSEMINATION:

• BDI published papers:

1. Aileni R. M, Chiriac L., Accessibility and usability of the learning tools to accelerate innovation in the field of smart materials development, *TexTeh X Proceedings*, pp. 328-333, doi: 10.35530/TT.2021.43

2. Aileni R.M., Stroe C., Smart textiles digitalisation using creative methods, *ICAMS 2022 – 9th International Conference on Advanced Materials and Systems*, Bucharest, Romania

• Scientific communications:

1. DigiTex presentation in the Workshop "Materiale avansate și Inginerie în contextul dezvoltării durabile", Bucharest, Romania, 3/06/2021, Online Zoom, Meeting ID: 892 6763 1979

2. DigiTex presentation in Workshop "Tehnologii inovative și materiale avansate în contextul economiei circulare", Bucharest, Romania, 15/10/2021, Online Zoom, Meeting ID: 840 7980 2250pre

3. DigiTex presentation in the Workshop 'Materiale avansate pentru inovare în domeniul industriei textile', INCDTP, Bucharest, Romania, 7/11/2022

4. DigiTex presentation in Workshop 'Abordări inovative pentru dezvoltarea materialelor textile avansate pentru provocări societale - 2026 în contextul tranziției la o economie digitală, sustenabilă pe bază de soluții inteligente', INCDTP, Bucharest, Romania, 10/03/2023

5. DigiTex presentation in the workshop 'Soluții inovative de dezvoltare accelerată a materialelor textile avansate pe bază de tehnologii digitale', INCDTP, Bucharest, Romania, 26/04/2023n the

6. Aileni R. M., Stroe C. E., Digital Learning technologies for advanced wearable textiles, *International Conference eLSE 2023*, 27-28/04/2023Mate

7. DigiTex project presentation in *Industria Textila 2023*

(http://revistaindustriatextila.ro/images/innercovers/cop23_2023_01.pdf)

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